

A Phase I Archaeological Survey  
of Proposed Borrow Areas for a Culvert Replacement  
on the Fort Knox Military Reservation,  
Bullitt County, Kentucky

by  
Stephen T. Mocas  
Assistant Staff Archeologist

May 1994

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Pamela A. Schenian  
Staff Archeologist  
and Project Principal Investigator

Directorate of Public Works, Fort Knox, Kentucky 40121-5000

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16. Abstract (Limit 200 words)  In March 1994, the Fort Knox Assistant Staff Archeologist conducted a Phase I archaeological survey of proposed borrow areas for a culvert replacement (approximately 0.42 ha or 1.04 acres) on the Fort Knox Military Reservation, Bullitt County, Kentucky. The survey resulted in the discovery of no archaeological materials or deposits. It is recommended that the culvert replacement be constructed as proposed.			
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## ABSTRACT

In March 1994, the Fort Knox Assistant Staff Archeologist conducted a Phase I archaeological survey of proposed borrow areas for a culvert replacement (approximately 0.42 ha or 1.04 acres) on the Fort Knox Military Reservation, Bullitt County, Kentucky. The survey resulted in the discovery of no archaeological materials or deposits. It is recommended that the culvert replacement be constructed as proposed.

## MANAGEMENT SUMMARY

In accordance with Executive Order 11593 and other applicable federal laws and regulations, a Phase I archaeological study was conducted of proposed borrow areas for a culvert replacement on the Fort Knox Military Reservation, Bullitt County, Kentucky. A literature search revealed that the area had not been previously surveyed. The project area was field inspected, with negative results. It is recommended that the culvert replacement be constructed as proposed.

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## I. INTRODUCTION

In March 1994, the Fort Knox Assistant Staff Archeologist performed a Phase I archaeological survey of proposed borrow areas for a culvert replacement at Fort Knox, Bullitt County, Kentucky (Figure 1). The project area is located in the firebreak along the east boundary of the installation. The proposed culvert replacement will be constructed in Mud Run, along the firebreak. An area in the firebreak 80 m by 30 m on the south side of the stream and 60 m by 30 m on the north side may be used for borrow or may be impacted by construction machinery.

During 1993, the Fort Knox Staff Archeologist obtained all the documents necessary to perform Phase I literature searches for the installation (e.g., site forms, reports of previous investigations, historic maps), and these are on file at the Cultural Resource Management Branch of the Directorate of Public Works, Fort Knox. No file check was made with the Office of State Archaeology and the Kentucky Heritage Council specifically for this project.

A literature search revealed that the project area had not been previously surveyed, therefore, during the present project the entire area was walked and shovel probed. The proposed borrow areas are located in the Plain section of the Pennyrile cultural landscape. The project area is in Hays Flats, an area of low relief in the floodplain of the Rolling Fork River, between the Knobs and Mississippian Plateau physiographic regions. Elevations in the project area range from 425 to 440 feet. Soils are classified as Belknap-Karnak soil association (U.S.D.A. 1975: General Soil Map) and McGary-Markland (Whitaker and Waters 1986:Map 41). Mud Run provides the drainage in the project area.

The archaeological survey was conducted in preparation for the borrowing of soil and construction of a culvert replacement. The archaeological survey and literature review were required to comply with the National Environmental Protection Act, or NEPA, (Public Law 91-190), the Historic Preservation Act of 1966, as amended (Public Law 89-665), the Archaeological Resources Protection Act of 1979 (Public Law 96-95), Presidential Executive Order 11593, and Army Regulation 420-40.

The project area was surveyed on March 18, 1994. A total of 1.0 person hour was spent in the survey of the proposed borrow areas. No artifacts were observed or collected in this survey. Documentation of this project will be curated at the University of Louisville Program of Archaeology, on a "permanent loan" basis, under contract number DABT 23-93-C-0093, for curatorial and technical support (copy of contract on file, DPW, Fort Knox, Kentucky). Duplicate copies of the documentation will be stored at the

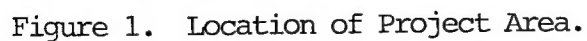


Figure 1. Location of Project Area.

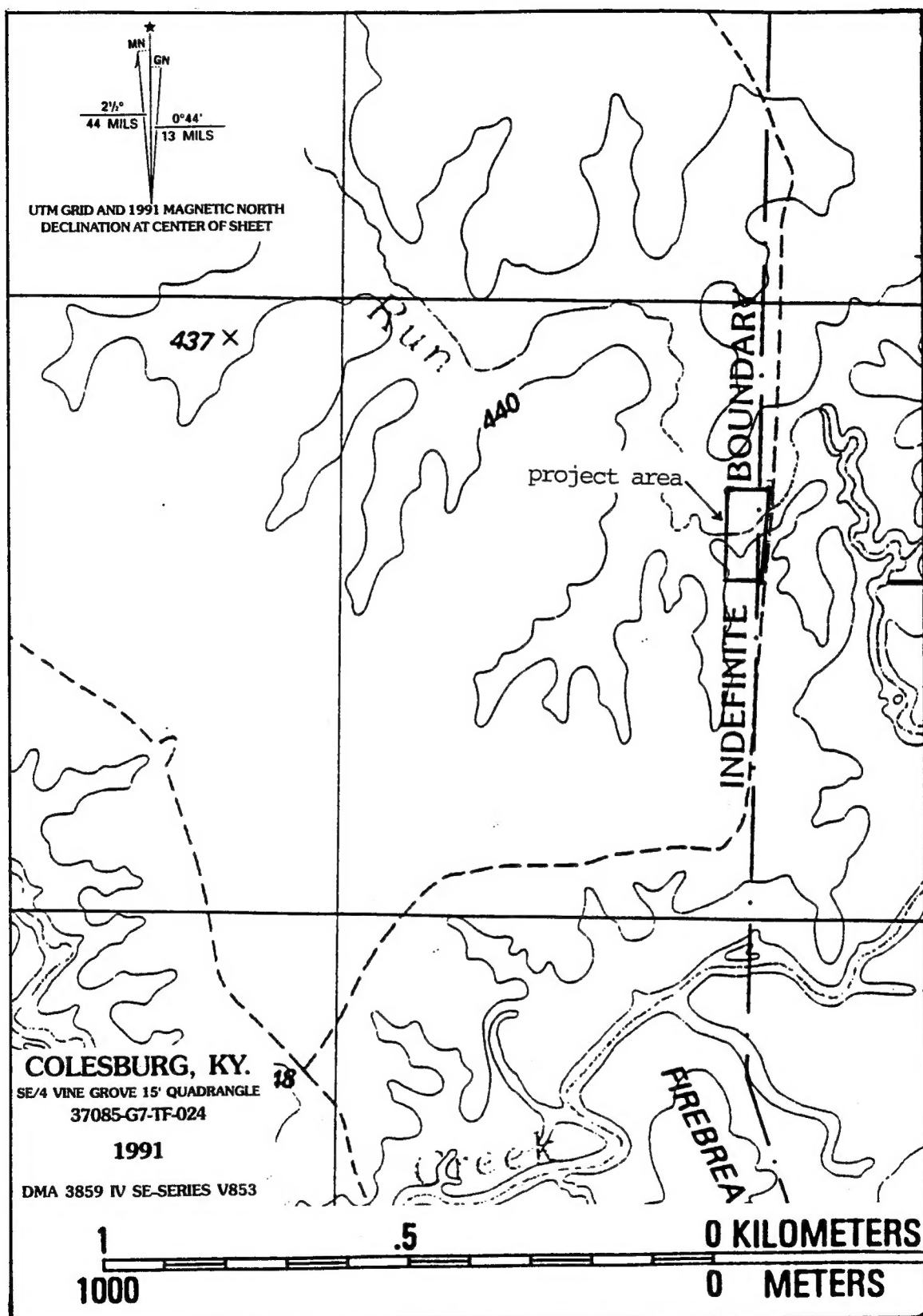


Figure 2. Plan View of Project Area.



Directorate of Public Works, U.S. Army Armor Center and Fort Knox, Fort Knox, Kentucky.

## II. PREVIOUS RESEARCH

Approximately 30,000 acres of the Fort Knox installation have been surveyed, primarily in cultural resource management (CRM) studies. There are 112 Hunting Areas (HA) on the Fort Knox installation. O'Malley et al. (1980) surveyed approximately one-quarter of each of the 96 hunting areas which did not contain grenade ranges. O'Malley et al. (1980) recorded 415 sites (15Bu295-15Bu410, 15Hd109-15Hd294, and 15Md103-15Md242). Some of these were recorded outside the official survey areas, and were discovered while gaining access to the selected survey areas from the closest access road. Some of the sites are isolated finds. O'Malley et al. (1980) did not formally evaluate the National Register status of any of the sites inspected, although opinions are offered on many of the site forms. The purpose of the O'Malley et al. (1980) study was to provide a preliminary inventory of portions of the installation and to develop a database for the predictive modeling of site locations on the installation, and not to evaluate sites for a task-specific construction project.

Holmberg (1991) prepared an archival study on the four mill sites (15Md164, 15Md176, 15Md185, and Grahamton) recorded by O'Malley et al. (1980) in the Meade County section of the base. Holmberg's (1991) study includes an appendix (Ball 1991a) delimiting a scope of services for the testing of the mill sites. This testing is scheduled to be performed in 1994 and 1995 through a Legacy grant.

A number of projects have been conducted in conjunction with proposed timber harvests. Bush et al. (1988) revisited 15Bu319 and recorded 15Hd438-15Hd446 and 15Bu485-15Bu491 in their survey of timber areas in HAS 41, 42, and 52. Myers (1990) surveyed 287 acres in HA 95, recording 15Bu495-15Bu502, and describing modern house and garbage dump sites. Mueller (1991) surveyed 270 acres in HA 1, revisiting 15Md11, 15Md152, and 15Md159, and recording 15Md322-15Md325, two historic cemeteries, five prehistoric isolated finds, and three modern structures. Schenian and Mocas (1992) surveyed 600 acres and attempted to relocate and flag previously recorded sites in an additional 300 acres. Their project areas consisted of 14 timber parcels located in HAS 13, 74, 76-78, 81-84, and 88-90. This survey resulted in the recording of sites 15Hd462-15Hd464, 15Md326, and one isolated find, and the revisiting of 15Hd140. Attempts were made to relocate 15Hd18, 15Hd113, and 15Hd139, but were unsuccessful. Ruple (1992b) revisited sites 15Md152, 15Md153, and 15Md322 in HA 1. Ruple (1992a) revisited sites 15Hd184, 15Hd186, and 15Hd249, and made an unsuccessful

attempt to relocate 15Hd248, in order to flag avoidance boundaries around the sites in HA 90 in preparation for logging activities in conjunction with the clearing of the Highway 313 easement. Ruple (1993a) surveyed all 813 acres comprising HA 4 in preparation for timber harvests.

The improvement of installation facilities has resulted in several CRM studies. Sorensen and Ison (1979) surveyed a proposed telephone building expansion site and access road in the cantonment, recording no sites. Sussenbach (1990) surveyed three weather radar installation sites, in HA 23, discovering one prehistoric isolated find. Ruple (1993b) surveyed approximately 10 acres in the cantonment for a shoreline maintenance project, encountering no sites. Mocas (1993) reported on the examination of approximately 165 acres in and around a proposed landfill and borrow area. Mocas (1994a) surveyed a 69.7 acre area around a proposed sports complex and 2.7 acres around and proposed water tower and along a pipeline in the cantonment, encountering no archaeological sites.

The development, expansion, or improvement of training areas has resulted in a number of CRM studies. Driskell and O'Malley (1979) surveyed the Wilcox Gunnery Range, recording sites 15Bu393-15Bu397. Schenian (1991) surveyed 116 acres in portions of HAs 17, 30, and 41, in conjunction with the Fort Dix realignment, re-examining 15Bu303, and recording 15Bu492, 15Hd459, and two prehistoric isolated finds. Hemberger (1991) also surveyed approximately 405 acres in seven construction sites in HAs 17, 24, 31, 32, 34, and 54, in conjunction with the Fort Dix realignment. This study resulted in the recording of 15Hd461 and 15Bu504, the revisiting of 15Bu299 and 15Bu385, and the unsuccessful attempt to relocate previously recorded site 15Hd274. Hemberger (1991) surveyed a total of 126 acres in four proposed construction areas in the Yano Tank Range, in HA 93, recording 15Hd460, revisiting 15Hd178, 15Hd182, and 15Hd282, and unsuccessfully attempting to relocate previously recorded site 15Hd283. Hemberger (1992) surveyed a 7.5 acre borrow area in HA 24, proposed to be used for the consolidation and improvement of two training ranges, and encountered no sites. Schenian and Mocas (1993) surveyed a total of 330 acres in 11 rehab areas in Training Areas 3, 6, and 8-11. The survey resulted in the revisiting of previously recorded sites 15Md143, 15Md154, 15Md163, and 15Md175, the recording of previously unrecorded sites 15Hd482-15Hd487, 15Md336-15Md342, and five isolated finds, and the unsuccessful attempt to relocate 15Hd17. Schenian (1994a) and Mocas (1994c) surveyed borrow pits for berm repair on the Yano Range, recording no sites in the former study and sites 15Bu524-15Bu527 in the latter. Schenian (1994b) recorded no sites in a survey of a proposed wetlands replacement on the Yano Range.

In conjunction with land sales, Ball (1987) surveyed approximately 196 acres in the Bullitt County portion of Fort Knox, recording sites 15Bu479-15Bu481 and describing one post-1950, or modern, house foundation. Ball (1991b) also surveyed a 19 acre tract near Radcliff prior to disposal of the tract, recording two historic/modern trash dumps which were not assigned state site numbers. Hale (1981) surveyed the Otter Creek Park, recording 15Md243-15Md303. Portions of Otter Creek Park, now owned by the City of Louisville, were once part of the Fort Knox installation, but were disposed of in the 1970's.

Road construction and improvements have resulted in a number of CRM projects on the military reservation. McGraw (1976) surveyed the proposed U.S. 60 bridge and approaches near Otter Creek park, encountering no sites in a 2.35 mile long corridor which passes through HAS 7-9 and 11 and 12. Fiegal (1982) surveyed the Radcliff Industrial Park access road, including land in HA 15 as well as off the installation. He recorded 15Hd403 and 15Hd404 off the installation, and revisited 15Hd215 and 15Hd272 on the installation. Webb and Brockington (1986) surveyed the 4.75 mile long Kentucky Highway 1638 realignment corridor, which included portions of HAS 5 and 7-10. They revisited sites 15Md176, and 15Md182-15Md185, and recorded 15Md306, 15Md307, and 15Md309. Sites 15Md176, 15Md182, 15Md183, and 15Md307 were all parts of the former town of Garnettsville. The latter three sites were tested (Wheaton 1982), but 15Md176 was not tested because it fell outside the 1638 realignment easement. DiBlasi (1986) surveyed 14 alternative alignments of the approximately 20 km (12.4 miles) long Kentucky Highway 313 corridor, which includes portions of HAS 80-83 and 90, as well as land outside the installation. A total of 27 sites (15Hd406-15Hd430 outside the installation, and 15Hd135, 15Hd184, 15Hd186, 15Hd248, 15Hd249, 15Hd253, 15Hd431, and 15Hd432 on the installation), some previously recorded, were located in the survey corridor. Hixon (1992) tested 15Hd423 and 15Hd426, and archaeologists from Wilbur Smith Associates tested six sites on the installation, including 15Hd249 and 15Hd253 (Fenton 1993: personal communication to Schenian). A recent survey of proposed borrow pits for the Yano-Cedar Creek Road improvements (Mocas 1994b) resulted in the recording of 15Hd489 and 15Hd490, the revisiting of 15Hd120 and 15Hd121, and the unsuccessful attempt to relocate 15Hd246. Schenian and Mocas (1994a) located prehistoric site 15Hd488 during a survey of 1.7 acres of proposed borrow area for the Cedar Creek Airstrip.

In addition to the CRM projects, several sites have been recorded on the military reservation in non-CRM contexts. Funkhouser and Webb (1932) published a catalog of archaeological sites in the state, with the information gained primarily through correspondence with amateur archaeologists, collectors, and local historians, and included the description of two mounds or mound groups (15Md10 and 15Md11) now

on the military reservation. Lee Hanson recorded 15Hd17 and 15Hd18, while attending ROTC training camp at Fort Knox in 1961 (Hanson 1961a, 1961b; Dr. R. Berle Clay 1991: personal communication). The wife of a soldier stationed at Fort Knox partially excavated 15Hd273, a mound in HA 6, in 1955 (Anonymous 1955).

Of greatest relevance to the current survey was the Mocas (1994c) survey of the proposed borrow areas on the north bank of the Rolling Fork, 3.2 km to the southwest, and the O'Malley et al. (1980) survey of the southeast quadrant of HA 112, 2.8 km to the south. Both these studies provide comparative information about the Hays Flats/Rolling Fork floodplain. No sites are recorded within a 3.0 km radius of the project area. No archaeological sites or standing structures listed on or eligible for listing on the National Register of Historic Places are located in or immediately adjacent to the current project area.

### III. SURVEY PREDICTIONS

Based on previous archaeological research in the area, the history of settlement, and the environmental setting of the project area, the following results were expected:

- 1) Knolls, terraces, and ridges above small drainages, situations similar to the current project area, are high potential areas for the location of prehistoric sites. The project area may be too prone to flooding to be a likely locale for a historic site.
- 2) Based upon other work in the Rolling Fork floodplain (Schenian 1994b), it is possible that the water table is too high for extended habitation.

### IV. SETTING AND FIELD METHODS

The project area is in Hays Flats, an area of low relief in the floodplain of the Rolling Fork River, between the Knobs and Mississippian Plateau physiographic regions (McGrain and Currens 1978:35). Elevations in the project area range from 425 to 440 feet. Soils are classified as Belknap-Karnak soil association (U.S.D.A. 1975: General Soil Map) and McGary-Markland (Whitaker and Waters 1986:Map 41). Mud Run provides the drainage in the project area.

The proposed borrow areas are on the north and south sides of Mud Run, and a road through the center of the fire-break provides access to the areas. Both borrow areas were plowed and disked when surveyed, and surface visibility was

100 percent. The project area was systematically walked in transects 5 m apart. Several shovel probes were made to examine the depositional characteristics of the areas. Shovel probes were approximately 30 cm in diameter at ground surface and excavated to a depth of at least 30 cm, or until a sterile subsoil was encountered. The walls of each shovel probe were scraped and inspected for evidence of archaeological deposits. No archaeological materials or deposits were encountered.

## V. CONCLUSIONS AND RECOMMENDATIONS

The Phase I literature search indicated that the project area had not been previously inspected. The entire project area was field inspected in the current study. The inspection of this area resulted in the discovery of no archaeological materials or deposits. It is recommended that the installation be permitted to develop the project area as proposed.

In the remote possibility that archaeological materials are discovered during earthmoving activities all activity in the vicinity of the finds must cease and the State Historic Preservation Officer (502-564-6661) and the DPW Cultural Resource Management Branch (502-624-6581) should be contacted, so a representative of those agencies may evaluate the materials. Also, if human remains, regardless of age or cultural affiliation, are discovered, all activity in the vicinity of the remains must cease immediately, and the state medical examiner (502-564-4545) and the appropriate local law enforcement agency (Fort Knox Law Enforcement Command, 502-624-6852) must be contacted, as stipulated in KRS 72.020.

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APPENDIX A.  
RESUMES OF KEY PERSONNEL

Pamela A. Schenian  
Staff Archeologist and Project Principal Investigator

Office Address: Directorate of Public Works  
ATTN: ATZK-DPW (Schenian)  
U.S. Army Armor Center and Fort Knox  
Fort Knox, Kentucky 40121-5000  
Phone: (502) 624-6581

Date and Place of Birth: January 1, 1959; Waukesha, WI.

Present Position: J.M. Waller & Associates/Fort Knox Staff  
Archeologist and Cultural Resource Manager

Education:

A.B.D. in Anthropology, Northwestern University, 1984.  
M.A. in Anthropology, Northwestern University, 1982.  
A.B. in Anthropology, Bryn Mawr College, 1980.

Previous Employment:

Senior Staff Archeologist, Archeology Service Center,  
Department of Sociology, Anthropology, and Social Work, Mur-  
ray State University, Murray, KY, November 1991-June 1993;  
Staff Archeologist, November 1983-November 1991.

Southern Illinois University, Carbondale, IL: Field  
Technician, November-December 1985, September-October 1984.

Illinois State Museum Society, Springfield, IL: Field  
Assistant II (Supervisor), summer 1983; Field Technician,  
summer 1981.

Center for American Archeology, Kampsville, IL: Field  
Technician, summer 1982.

Department of Anthropology, Northwestern University,  
Evanston, IL: Teaching Assistant, 1981-82 academic year.

Great Lakes Archeological Research Center, Milwaukee,  
WI: Field Technician, summer 1979.

Field Research Experience:

Field experience on prehistoric and historic archeologi-  
cal projects in the states of Illinois, Indiana, Kentucky,  
New Jersey, South Dakota, Tennessee, and Wisconsin, 1979-  
present.

Professional Publications, Reports, Papers and Manuscripts:  
84 CRM contract reports on projects in Indiana, Kentucky,  
and Tennessee.

1 Homicide site excavation contract report prepared in lieu  
of court testimony in Illinois.

7 Papers presented at professional conferences.

5 Publications, 1 in press.

Doctoral candidacy qualifying paper: "A Theory of Individ-  
ual Style Variation for Archeological Studies".

Manuscript submitted in partial fulfillment of the M.A.

requirements: "Models of Environmental-Cultural Relation-  
ships: Testing with Archeological Evidence".

Stephen T. Mocas  
Assistant Staff Archaeologist

Office Address: Directorate of Public Works  
ATTN: ATZK-DPW (Mocas)  
U.S. Army Armor Center and Fort Knox  
Fort Knox, Kentucky 40121-5000  
Phone: (502) 624-6581

Present Position: University of Louisville Program of  
Archaeology/Fort Knox Assistant Staff Archeologist

Education:

Completed one year of doctoral program, Southern Illinois University, Carbondale, Illinois, 1972.

B.A. in Anthropology, University of Louisville, 1971.

Previous Employment:

Indiana University, Bloomington, Indiana: Staff Archaeologist, September 1991-November 1993.

Murray State University, Murray Kentucky: Staff Archaeologist, November 1991-November 1993.

Jefferson Community College, Louisville, Kentucky.  
Anthropology Instructor, August 1981-December 1982.

Louisville School of Art, Louisville, Kentucky: Anthropology Instructor, January-May 1976.

University of Louisville Archaeological Survey, Louisville, Kentucky. Project Director, Field Supervisor, or Research Assistant on various projects, July 1969-January 1977.

State University of New York of Buffalo, Buffalo, New York. Senior Field Worker, June-August 1970.

Field Research Experience:

Field experience, Phase I-III, prehistoric and historic archaeological projects in the states of Illinois, Indiana, Kentucky, New York, and Tennessee, 1969-present.

Research Grants:

Six grants for fieldwork and research.

Professional Publications, Reports, Papers and Manuscripts:

3 non-contract site reports on projects  
16 CRM contract reports on projects  
5 Chapters in additional site reports.  
4 Publications, 1 in press.